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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN BA, HOANG VU A

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,391

Applicant(s)

HINES, KENNETH J.

Examiner

Hoang-Vu A Nguyen-Ba

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date see Office action.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the application filed June 12, 2001.
2. Claims 1-62 have been examined.

Priority

3. The Office acknowledges this application's claim of priority under 35 U.S.C. Section 119(e) based on provisional application U.S. Serial No. 60/213,496, filed on June 23, 2000.

Information Disclosure Statement

4. The references listed in the Information Disclosure Statements (IDSs), filed on October 11, 2001, December 31, 2001, May 7, 2002, November 25, 2002, September 16, 2004 and October 12, 2004, have been considered by the Examiner.

Oath/Declaration

5. The Office acknowledges receipt of a properly signed oath/declaration filed June 12, 2001.

Drawings

6. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
7. The drawings are objected to because shading used in the drawings renders numbers and reference characters not legible.
8. Prior art label is required for Figures 3A and 3B.

9. Figure 3A:
 - a. the term “sucessor” is misspelled; and
 - b. the arrows in the figure are not legible.
10. Figure 15 appears to contain a trademark, e.g., “Telco.” Trademark should be accompanied with an appropriate designation symbol, e.g., TM or ®, as appropriate.
Appropriate correction is required.

Specification

11. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minors errors. Applicants’ cooperation is requested in correcting any errors of which applicants may become aware in the specification.

Claim Objection

12. Claims 3, 4, 5, 6, 7, 8, 13, 16, 19, 22, 24, 27, 30, 39, 50, 57, 58, 59, 61 and 62, are objected to because of the following informalities.

Claims 3, 4, 5, 6, 7, 8, 19, 22, 24, 27, 30 and 39 recite the term “complimentary.” This term is mistyped and should be changed to – complementary –.

Claim 5 recites the limitation “the a first part” in line 1. This limitation should be changed to – the first part –.

Claims 13 and 57 recite the limitation “component” in lines 2 and 8, respectively. This limitation should be changed to – components –.

Claims 16 and 43: a period is needed at the end of the claim to mark the end of the claim.

Claim 19 recites the limitation “control and data flow” in line 5. The term “flow” should be in plural.

Claims 27, 59, 60, 61 and 62 should have a conjunctive – and – at the end of lines 11, 4, 5, 4 and 5, respectively.

Claim 27 recites the verb “importing” in line 10. The verb “importing” should be changed to – import –.

Claims 50 and 58 should have a colon – : – instead of a semi-colon “ ; ” at the end of lines 2 and 1, respectively.

Claim 61 recites the limitation “an action” twice. The second occurrence of this limitation should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claim 15 is rejected under 35 U.S.C. § 112, first paragraph as being a single means claim. MPEP 2164.08(a).

The claim language of claim 15 appears to be that of a claim with a preamble reciting a use or purpose of the claimed invention method using a coordination interface for software packaging.

As claimed, claim 15 appears to be a single claim that claims both a method and a product, and is therefore indefinite under 35 U.S.C. 112, second paragraph. See

the rejection of this claim under 35 U.S.C. 112, second paragraph hereinafter. If claim 15 is construed to be a system claim then claim 15 is considered to be a single means claim (e.g., the single means being the coordination interface for software packaging).

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. § 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claims cover every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

In the instant application, claim 15 covers every conceivable means for software packaging while the specification discloses at most only those known to the inventor.

On this basis, claim 15 is rejected under 35 U.S.C. § 112, first paragraph.

Claims 16-18, which depend from claim 15, are also rejected under 35 U.S.C. § 112, first paragraph for the same reason.

15. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 8, 12, 13, 16, 18, 27, 28, 29, 30, 32, 34, 44 and 57 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Vague and unclear:

i. Claim 48 recites the phrase “a coordinator for implementing a communication protocol ... and connected to the first software component and the second software components.” This phrase appears to be ungrammatical and as such is unclear. For art rejection purposes, the phrase is construed to be – a coordinator for implementing a communication protocol ... and a connection to the first software component and the second software component. –

ii. Claim 34 recites the limitation “the result” in line 2. It is unclear as to which result is being referred to.

iii. Claim 44 recites the limitations “the first port” and “the second port.” It is not clearly understood whose component(s) these ports belong to.

b. Lack of antecedent basis:

i. Claims 12 and 13 recite the limitation “the guarantee” in line 1. There is insufficient antecedent basis for this limitation in the claim.

ii. Claim 16 recites the limitation “the interface” in line 3. There is insufficient antecedent basis for this limitation in the claim.

iii. Claims 8 and 18 recite the limitation “the port” in lines 3, 4, 6, 7 and 8. There is insufficient antecedent basis for this limitation in the claim.

iv. Claims 27 (lines 4, 6, 8), 28 (line 2), 29 (line 2), 32 (line 1) and 57 (line 8) recite the limitation “the first component.” There is insufficient antecedent basis for this limitation in the claim.

v. Claims 27 (lines 5, 10, 14), 28 (line 2), 29 (line 2), 30 (line 2) recite the limitation “the result.” There is insufficient antecedent basis for this limitation in the claim.

vi. Claim 44 recites the limitation “the first port” in line 1. There is insufficient antecedent basis for this limitation in the claim.

vii. Claim 44 recites the limitation “the second port” in line 2. There is insufficient antecedent basis for this limitation in the claim.

viii. Claim 57 recites the limitation “the second component” in line 8. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

17. Claims 1 and 15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A single claim, which claims both a method and a product, is indefinite under 35 U.S.C. 112, second paragraph. In *Ex parte Lyell*, 17 USPQ 2d 1548 (Bd. Pat. App. & Inter. 1990), a claim directed to an automatic transmission workstand and the method steps of using it was held to be ambiguous and properly rejected under 35 U.S.C. 112, second paragraph.

In claim 1, it is unclear whether a methodology or a system comprising a first component, a first coordinator and a first pair of coordination interfaces for designing a software system is claimed. With a methodology recited in the preamble, one would expect to find in the body of the claim method steps for designing a software system. However, one only found components for designing a software system in the body of claim 1.

In claim 15, it is unclear whether a methodology or a software system comprising a coordination interface for software packaging is claimed.

Claims 2-14, which depend from claim 1, and claims 16-18 which depend from claim 15, are also rejected under 35 U.S.C. § 112, second paragraph for the same reasons.

Correction is required.

Claim Rejections – 35 USC § 101

18. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

19. Claims 1 and 15 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

A single claim which claims both a product and the method steps of using the product should also be rejected under 35 U.S.C. 101, *Ex parte Lyell*, 17 USPQ 2d 1548 (Bd. Pat. App. & Inter. 1990), based on the theory that the claim is directed to neither a “process” nor a “machine,” but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551.

Claims 2-14, which depend from claim 1, and claims 16-18 which depend from claim 15, are also rejected under 35 U.S.C. § 101 for the same reasons.

20. Claims 1-14, 15-18, 19-26, 27-36, 48-56, 57 and 58-62 are rejected under 35 U.S.C § 101 because the claimed invention is directed to non-statutory subject matter.

If claim 1 is construed to be a system claim, then claim 1 merely recites a software system for designing a software system comprising a first component, a first coordinator and a first pair of coordination interfaces. These components are merely software components, i.e., computer program per se. Such claimed matter, which is descriptive material *per se*, non-functional descriptive material is not statutory because it is not a physical “thing” nor a statutory process as there are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed aspects of the invention which permit the computer’s program’s functionality to be realized. Since a computer program is merely a set of instructions capable of being executed by a computer, the program itself is not a process, without the computer-readable medium needed to realize the computer’s functionality. In contrast, a claimed computer-readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which permit the computer program’s functionality to be realized, and is thus mandatory. *Warmerdam*, 33 F.d at 1361, 31 USPQ 2d at 1760. *In re Sarkar*, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978). See MPEP § 2106 (IV)(B)(1)(a).

On this basis, claim 1 is rejected under 35 U.S.C. § 101.

Claims 2-14, which depend from claim 11, are also rejected under 35 U.S.C. § 101 for the same reasons.

If claim 15 is construed to be a system claim, then claim 15 merely recites a coordination interface for software packaging. The coordination interface is merely a software component.

On this basis, claim 15 is rejected under 35 U.S.C. § 101 for the same reasons discussed above in conjunction with claim 1.

Claims 16-18, which depend from claim 15, are also rejected under 35 U.S.C. § 101 for the same reasons.

The same rejection also applies to claims 19-26, 48-56, 57 and 58-62 since a system software for executing on a hardware platform (claims 19-26), a software system (claims 48-56) and a system software (claims 58-62) are claimed respectively.

Claims 27-36 are also rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter. The Office's interpretation of these claims is that they do not expressly or implicitly require performance of any steps by a machine, such as a general purpose digital computer. Structure will not be read into the claims for the purposes of the statutory subject matter analysis even though the steps might be capable of being performed by a machine even though no machine has been disclosed in this application.

Claim Rejections – 35 U.S.C. § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

22. Claims 1-10, 15, 19-26, 27-31, 37-39, 48, 57 and 58 are rejected under 35 U.S.C. § 102(a) as being anticipated by the admitted prior art (APA) of pages 1-7 of applicants' background.

Claim 1

APA discloses at least:

a first component for realizing a predetermined functionality (see at least section 1, “Packaging of Software Elements,” claimed *first component* is interpreted to mean software element);

a first coordinator for managing interactions between the first component and a second component (see at least section 1, “Packaging of Software Elements,” e.g., claimed *first coordinator* is interpreted to mean software interface);

coordination interface for implementing a connection between the first component and the first coordinator so as to preserve component modularity while exposing only the parts of the component that participate in coordination (see at least section 2, “Approaches to Coordination”).

Claim 15

APA discloses at least *a computer software design methodology comprising a coordination interface for software packaging, wherein the coordination interface comprises at least one named port* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination”).

Claim 19

APA discloses at least:

a first component having a first coordination interface (see at least section 1, “Packaging of Software Elements”);

a second component having a second coordination interface (see at least section 1, “Packaging of Software Elements”);

a coordinator for coordinating control and data flow between the first and second components and having a third coordination interface that is complementary to the first coordination

interface and a fourth coordination interface that is complimentary to the second coordination interface (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination").

Claims 27 and 37

APA does not specifically disclose the following:

designing a first software component for performing a first predetermined functionality that when activated produces a defined result

designing a first coordination interface for logically connecting the first component to the first coordination interface in order to export the result produced by the first component

designing a second component for performing a second predetermined functionality that can respond to the defined result produced by the first component

designing a second coordination interface for logically connecting the second component to the second coordination interface in order to importing the result produced by the first software component

designing a coordinator with a third coordination interface that is complimentary to the first coordination interface and a fourth coordination interface that is complimentary to the second coordination interface, for transferring the result exported by the first coordination interface from the first coordination interface to the second coordination interface.

However, the above features are deemed inherently taught by principles of designing software components with predetermined functionality and coordinator with coordination interfaces are described in section 1, i.e., "Packaging of Software Elements," and section 2, "Approaches to Coordination" of Applicants' background of the invention. Without the fundamental teachings of software packaging and coordination, multiple components and various interfacing modes would not be possibly implemented.

Claim 48

APA discloses at least:

a first software component comprising a first action (see at least section 1, “Packaging of Software Elements”);
a second software component comprising a second action (see at least section 1, “Packaging of Software Elements”);
a coordinator for implementing a communication protocol between the first software component and the second software component and connected to the first software component and the second software component (see at least section 2, “Approaches to Coordination”).

Claim 57

APA does not specifically disclose:

creating a first software component comprising a first action, a first mode and a first coordination interface;
creating a second software component comprising a second action, a second mode and a second coordination interface;
creating a coordinator, to implement a predetermined communication protocol between the first and second component by coordinating control and dataflow interactions between the first component and the second component, comprising:
a third action;
a third mode;
a third coordination interface connected to the first coordination interface; and

a fourth coordination interface connected to the second coordination interface.

However, the above features are deemed inherently taught by principles of designing software components with predetermined functionality and coordinator with coordination interfaces are described in section 1, i.e., "Packaging of Software Elements," and section 2, "Approaches to Coordination" of Applicants' background of the invention. Without the fundamental teachings of software packaging and coordination, multiple components and various interfacing modes would not be possibly implemented.

Claim 58

APA does not specifically disclose:

n components, where n is an integer greater than zero, each component designed to perform a predetermined functionality;

m coordinators, where m is an integer greater than zero, each coordinator designed to implement a predetermined coordination protocol between a set of the n components; and

n coordination interface pairs, each coordination interface pair designed to logically connect a component to a coordinator for transferring information between the component and the coordinator.

However, the above features are deemed inherently taught by principles of designing software components with predetermined functionality and coordinator with coordination interfaces are described in section 1, i.e., "Packaging of Software Elements," and section 2, "Approaches to Coordination" of Applicants' background of the invention. Without the fundamental teachings of software packaging and coordination, multiple components and various interfacing modes would not be possibly implemented.

Claim 2

The rejection of base claim 1 is incorporated. APA further discloses *wherein the first coordinator implements a predetermined coordination protocol* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination”).

Claim 3

Rejections of base claim 1 and intervening claim 2 are incorporated. APA further discloses *wherein the first pair of coordination interfaces includes a pair of complimentary ports to transfer information between the coordination interfaces* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination,” e.g., adapters with interfaces complementary to the interface for the software element, page 4, lines 9-10).

Claim 4

Rejections of base claim 1 and intervening claims 2, 3 are incorporated. APA further discloses *wherein a first port of the pair of complimentary ports has a combination of attributes realizing an output message port and the other port of the pair of complimentary ports has a combination of attributes realizing an input message port* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination,” e.g., tuple space coordination).

Claim 5

Rejections of base claim 1 and intervening claims 2, 3 are incorporated. APA further discloses *wherein the a first port of the pair of complimentary ports has a combination of attributes realizing an exported state port and the other port of the pair of complimentary ports has a*

combination of attributes realizing an imported state port (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination;” e.g., tuple space coordination).

Claim 6

Rejections of base claim 1 and intervening claims 2, 3 are incorporated. APA further discloses *wherein a first port of the pair of complimentary ports has a combination of attributes realizing a first control port, and the other port of the pair of complimentary ports has a combination of attributes realizing a second control port that is complimentary to the first control port* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination;” e.g., tuple space coordination).

Claim 7

Rejections of base claim 1 and intervening claims 2, 3 are incorporated. APA further discloses *wherein a first port of the pair of complimentary ports has a combination of attributes realizing a first arbitrated state port, and the other port of the pair of complimentary ports has a combination of attributes realizing a second arbitrated state port that is complimentary to the first arbitrated state port* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination;” e.g., tuple space coordination).

Claim 8

Rejections of base claim 1 and intervening claims 2, 3 are incorporated. APA further discloses *wherein each port of the pair of complimentary ports is defined by a five-tuple (T, A, Q, D, R) where*

T represents a datatype of the port;

A is a Boolean value that is true if and only if the port is arbitrated;

Q is a predetermined integer greater than zero that represents logical queue depth of the port;

D represents a directionality of data flows with respect to the port; and

R represents a policy for data removal on the port (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 9

Rejections of base claim 1 and intervening claims 2, 3, 8 are incorporated. APA further discloses *wherein D is one of {in, out, inout} representing data flow into the port, out of the port, or bi-directional, respectively* (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 10

Rejections of base claim 1 and intervening claims 2, 3, 8, 9 are incorporated. APA further discloses *wherein D is one of {in, out, inout or custom}, where custom directionality permits restricting the port to accept or to generate only certain specific predetermined values* (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 20

The rejection of base claim 19 is incorporated. APA further discloses *wherein the second port has a combination of attributes realizing a second message port that is complimentary to the first message port* (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 21

Rejections of base claim 19 and intervening claim 20 are incorporated. Since claim 21 recites the same features of claim 4, the same rejection is thus applied.

Claim 22

Rejections of base claim 19 and intervening claims 20, 21 are incorporated. APA further discloses *wherein the second port has a combination of attributes realizing a second message port that is complimentary to the first message port* (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 23

Rejections of base claim 19 and intervening claim 20 are incorporated. Since claim 23 recites the same feature of claim 5, the same rejection is thus applied.

Claim 24

Rejections of base claim 19 and intervening claims 20-22 are incorporated. APA further discloses *wherein the second port has a combination of attributes realizing a second state port that is complimentary to the first message port* (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 25

Rejections of base claim 19 and intervening claim 20 are incorporated. Since claim 25 recites the same feature of claim 6, the same rejection is thus applied.

Claim 26

Rejections of base claim 19 and intervening claims 20, 25 are incorporated. Since claim 26 recites the same feature of claim 6, the same rejection is thus applied.

Claims 28 and 38

The rejection of base claims 27 and 37 is incorporated. APA further discloses *a method in which the first coordination interface has a first port for exporting the result produced by the first component* (see at least section 2, “Approaches to Coordination”).

Claim 29

Rejections of base claim 27 and intervening claim 28 are incorporated. APA further discloses *a method in which the second coordination interface has a second port for importing the result produced by first component* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination”).

Claims 30 and 39

Rejections of base claims 27, 37 and intervening claims 28, 38 respectively are incorporated. APA further discloses *a method according to claim 29 in which the third coordination interface has a third port that is complimentary to the first port for importing the result exported by the first port, and in which the fourth coordination interface has a fourth port that is complimentary to the second port for exporting the result imported by the third port* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination”).

Claim 31

Rejections of base claim 27 and intervening claims 28-30 are incorporated. APA further discloses a *method according to claim 30 in which the third coordination interface is bound to the fourth coordination interface in a manner that implements a predetermined coordination protocol* (see at least section 1, “Packaging of Software Elements,” and section 2, “Approaches to Coordination”).

Claim Rejections – 35 USC § 103

23. The following is a quotation of the 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 11-14, 16-18, 32-36, 40-47, 49-56 and 59-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA as applied to the base and intervening claims, in view of Chou et al. (“Chou”)’s teachings of IPChinook: An Integrated IP-based Design Framework for Distributed Embedded Systems.

Claim 11

Rejections of base claim 1 and intervening claim 2 are incorporated. APA does not specifically disclose *wherein the first coordination interface implements a predetermined guarantee of a selected invariant interface property of the first component*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control

coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 12

Rejections of base claim 1 and intervening claims 2, 11 are incorporated. APA does not specifically disclose *wherein the guarantee specifies a predetermined event ordering*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose of guaranteeing a predetermined event ordering.

Claim 13

Rejections of base claim 1 and intervening claims 2, 11 are incorporated. APA does not specifically disclose *wherein the guarantee specifies an acceptable relative behavior between the first and second component*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose of guaranteeing acceptable behavior between two components.

Claim 14

Rejections of base claim 1 and intervening claim 2 are incorporated. APA does not specifically disclose *wherein the first coordination interface includes a specified requirement and the second coordination interface includes a specified guarantee that satisfies the specified requirement of the first coordination interface*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose of guaranteeing specified requirements for coordination between two components.

Claim 16

The rejection of base claim 15 is incorporated. APA does not specifically disclose *wherein the coordination interface further comprises:*

a set of at least one named guarantee provided by the interface;

a set of at least one named requirement that must be matched by a guarantee of a connected interface.

However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 17

Rejections of base claim 15 and intervening claim 16 are incorporated. APA does not specifically disclose *wherein the coordination interface further comprises a set of coordination interfaces including at least a second coordination interface, thereby making coordination interfaces hierarchical*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 18

The rejection of base claim 15 is incorporated. Since claim 18 recites the same features of claim 8, the same rejection is therefore applied.

Claim 32

The rejection of base claim 27 is incorporated. APA does not specifically disclose *a method according to claim 27 in which the first component comprises a first action, for implementing the first predetermined functionality, a first mode for implementing a boolean guard on the first action, and a first event to serve as a trigger for initiating the first action*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 33

Rejections of base claim 27 and intervening claim 32 are incorporated. APA does not specifically disclose a *method according to claim 32 in which the second component comprises a second action, for implementing the second predetermined functionality, a second mode for implementing a boolean guard on the second action, and a second event to serve as a trigger for initiating the second action*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 34

Rejections of base claim 27 and intervening claims 32-33 are incorporated. APA does not specifically disclose *in which the coordinator comprises a binding between the third and fourth coordination interfaces for transferring the result from the third coordination interface to the fourth coordination interface*. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 35

Rejections of base claim 27 and intervening claims 32-33 are incorporated. APA does not specifically disclose a *method according to claim 33 in which the coordinator*

comprises a coordinator action which performs a predetermined coordinator function, and a mode which serves as a boolean guard on the coordinator action. However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 36

Rejections of base claim 27 and intervening claims 32-34 are incorporated. APA does not specifically disclose a *method according to claim 35 in which the coordinator further comprises a constraint which serves to enforce a predetermined relationship between a pair of control ports.* However, Chou teaches a design tool for distributed embedded systems that uses of high-level primitives called Abstract Control Types (ACTs) for the purpose of control coordination (see at least section 2.1.2). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Chou's ACTs with APA teachings for the purpose discussed above.

Claim 40

Rejections of base claim 37 and intervening claims 38-39 are incorporated. Since claim 40 recites one of the features of claim 32, the same rejection is thus applied.

Claim 41

Rejections of base claim 37 and intervening claims 38-40 are incorporated. Since claim 41 recites one of the features of claim 33, the same rejection is thus applied.

Claim 42

Rejections of base claim 37 and intervening claims 38-41 are incorporated. Since claim 42 recites one of the features of claim 30, the same rejection is applied.

Claim 43

Rejections of base claim 37 and intervening claims 38-42 are incorporated. Since claim 43 recites one of the features of claim 34, the same rejection is thus applied.

Claim 44

Rejections of base claim 37 and intervening claims 38-43 are incorporated. APA further discloses *the method of claim 43 in which the first port is an input data port and the second port is an output data port* (see at least section 1, "Packaging of Software Elements," and section 2, "Approaches to Coordination;" e.g., tuple space coordination).

Claim 45

Rejections of base claim 37 and intervening claims 38-42 are incorporated. Since claim 45 recites an obvious variation of features claimed in claim 34, the same rejection is thus applied.

Claim 46

Rejections of base claim 37 and intervening claims 38-42 are incorporated. Since claim 46 recites an obvious variation of features claimed in claim 34, the same rejection is thus applied.

Claim 47

Rejections of base claim 37 and intervening claims 38-42 are incorporated. Since claim 47 recites an obvious variation of features claimed in claim 34, the same rejection is thus applied.

Claim 49

The rejection of base claim 48 is incorporated. Since claim 49 recites one of the features of claim 32, the same rejection is thus applied.

Claim 50

Rejections of base claim 48 and intervening claim 49 are incorporated. Since claim 50 recites some of the features of claim 33, the same rejection is thus applied.

Claim 51

Rejections of base claim 48 and intervening claim 49-50 are incorporated. Since claim 51 recites obvious variations of claims 32 and 33, the same rejections are thus applied.

Claim 52

Rejections of base claim 48 and intervening claim 49-51 are incorporated. Since claim 52 recites an obvious variation of claim 34, the same rejection is thus applied.

Claim 53

Rejections of base claim 48 and intervening claim 49-52 are incorporated. Since claim 53 recites an obvious variation of claim 34, the same rejection is thus applied.

Claim 54

Rejections of base claim 48 and intervening claim 49-53 are incorporated. Since claim 54 recites an obvious variation of claim 34, the same rejection is thus applied.

Claim 55

Rejections of base claim 48 and intervening claim 49-54 are incorporated. Since claim 55 recites an obvious variation of claim 34, the same rejection is thus applied.

Claim 56

Rejections of base claim 48 and intervening claim 49-55 are incorporated. Since claim 56 recites an obvious variation of claim 34, the same rejection is thus applied.

Claim 59

The rejection of base claim 58 is incorporated. Since claim 59 recites an obvious variation of features claimed in claim 32, the same rejection is thus applied.

Claim 60

Rejections of base claim 58 and intervening claim 59 are incorporated. Claim 60 recites an obvious variation of the software system claimed in claim 58, therefore, the same rejection is deemed applicable to claim 60.

Claim 61

Rejections of base claim 58 and intervening claim 59 are incorporated. Since claim 60 recites an obvious variation of features claimed in claim 32, the same rejection is thus applied.

Claim 62

Rejections of base claim 58 and intervening claims 59, 61 are incorporated. Claim 62 recites an obvious variation claim 58, therefore, the same rejection is thus applied.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu “Antony” Nguyen-Ba whose telephone number is (571) 272-3701. The Examiner can normally be reached on Tuesday-Friday, 6:45 to 16:45.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner’s supervisor, Tuan Dam can be reached at (571) 272-3695. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Anthony Nguyen-Ba". The signature is written in a cursive, flowing style.

ANTONY NGUYEN-BA
PRIMARY EXAMINER

Art Unit 2122

December 7, 2004